

## **Hamilton, Cynthia**

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**From:** Fuller, Kathleen  
**Sent:** Friday, September 15, 2000 3:10 PM  
**To:** Hamilton, Cynthia  
**Subject:** LITIGATION SEARCH 5 707 780



HAM481.DOC

KATHLEEN FULLER 308-4290

?FI WPAT

QUESTEL - Time in minutes : 0,96  
The cost estimation below is based on Questel's  
standard price list

Estimated cost :	0.76 USD
Cost estimated for the last database search :	0.76 USD
Estimated total session cost :	0.76 USD

Selected file: WPAT

You are now connected to Derwent World Patent Index  
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UP (basic) , UE (equiv) , UA (poly) , UB (chem) updates thru 2000-44  
Year 2000: see INFO DWPI; New Content and DWPX: see INFO NEW-DWPI  
Last database update : 2000/09/14 (YYYY/MM/DD)

Search statement 1

?/PN US5707780

\*\* SS 1: Results 1

Search statement 2

?PRT MAX LEGALALL

1/1 WPAT - (C) Derwent  
AN - 1997-052528 [05]  
XA - C1997-017581  
XP - N1997-043026  
TI - Photohardenable compsn. with good green strength - contg. cationically  
and free radical polymerisable cpds. photo-acid and free radical  
initiator has low toxicity and low sensitivity to water  
DC - A21 A89 E14 G06 P83 P84  
PA - (DUPO ) DU PONT DE NEMOURS & CO E I  
IN - CASPAR JV; LAWTON JA; NEBE WJ; THOMMES GA  
NP - 4  
NC - 19  
PN - WO9641239 A1 19961219 DW1997-05 G03F-007/029 Eng 38p \*  
AP: 1996WO-US08488 19960604  
DSNW: JP  
DSRW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
- US5707780 A 19980113 DW1998-09 G03F-007/028 9p  
AP: 1995US-0476482 19950607; 1996US-0612509 19960307  
- EP-830641 A1 19980325 DW1998-16 G03F-007/029 Eng  
FD: Based on WO9641239  
AP: 1996EP-0919045 19960604; 1996WO-US08488 19960604  
DSR: DE FR GB  
- JP11507090 W 19990622 DW1999-35 C08G-059/20 33p  
FD: Based on WO9641239  
AP: 1996WO-US08488 19960604; 1997JP-0501074 19960604  
PR - 1995US-0476482 19950607; 1996US-0612509 19960307  
CT - EP-207893; EP-425440; EP-535828; EP-605361; WO9001727  
IC - C08F-020/00 C09D-004/02 C08G-059/20 G03F-007/028 G03F-007/029  
B29C-067/00 C08F-002/50 C08G-059/40 G03C-009/08 G03F-007/027  
G03F-007/038 G03F-007/26  
AB - WO9641239 A  
A photohardenable compsn. contains (i) a mixt. of cationically  
polymerisable org. cpds., (ii) a blend of free radical polymerisable  
org. cpds., (iii) a photoacid precursor, (iv) opt. a sensitiser, (v) a  
free radical initiator and (vi) opt. water. The compsn. is used for  
solid imaging and articles with increased initial green strength.

- Also claimed are: (i) a method of making an integral three dimensional article with increased green strength by controlling the diffusion of photoactivated molecular species in the areas of the above compsn. which are exposed; and (ii) a combination of a free radical initiator and a photoacid precursor for use in a photohardenable compsn..
- Pref. the sensitiser is 1,12 benzoperylene, 1,8-diphenyl-1,3,5,7-octatetrane, or 1, 6-diphenyl-1, 3, 5-hexatriene. Pref. the photoacid precursor is a triarylsulphonium salt and the free radical initiator is 4-(2-hydroxyethoxy)phenyl- (2-propyl) ketone. The blend of free-radical polymerisable cpds. contains at least one mono-functional and at least one multi-functional acrylic monomer. The mono-functional monomer is pref. caprolactone acrylate.
- USE - Photohardenable compsns. for solid imaging esp. with an Ar ion laser.
- ADVANTAGE - The compsn. has good speed and gives solid images with good resolution, accuracy and initial green strength. The compsn. has low toxicity and low sensitivity to water. (Dwg.0/0)

USAB- US5707780 A

- A photohardenable compsn. contains (i) a mixt. of cationically polymerisable org. cpds., (ii) a blend of free radical polymerisable org. cpds., (iii) a photoacid precursor, (iv) opt. a sensitiser, (v) a free radical initiator and (vi) opt. water. The compsn. is used for solid imaging and articles with increased initial green strength.
- Also claimed are: (i) a method of making an integral three dimensional article with increased green strength by controlling the diffusion of photoactivated molecular species in the areas of the above compsn. which are exposed; and (ii) a combination of a free radical initiator and a photoacid precursor for use in a photohardenable compsn..
  - Pref. the sensitiser is 1,12 benzoperylene, 1,8-diphenyl-1,3,5,7-octatetrane, or 1, 6-diphenyl-1, 3, 5-hexatriene. Pref. the photoacid precursor is a triarylsulphonium salt and the free radical initiator is 4-(2-hydroxyethoxy)phenyl- (2-propyl) ketone. The blend of free-radical polymerisable cpds. contains at least one mono-functional and at least one multi-functional acrylic monomer. The mono-functional monomer is pref. caprolactone acrylate.
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  - ADVANTAGE - The compsn. has good speed and gives solid images with good resolution, accuracy and initial green strength. The compsn. has low toxicity and low sensitivity to water. (Dwg.0/0)

MC - CPI: A08-C01 A08-D01 A11-C02B A12-L02C E10-A01 E10-E04M1 G06-D04 G06-F03B G06-F03C G06-F03D

UP - 1997-05

UE - 1998-09; 1998-16; 1999-35

1/3 LGST - (C) LEGSTAT

PN - EP 830641 [EP-830641]

AP - EP 96919045/96 19960604 [1996EP-0919045]

DT - EP-P

ACT - 19960604 EP/AE-A

EP-APPLICATION

EUROPAEISCHE ANMELDUNG

{EP 96919045/96 19960604 [1996EP-0919045]}

- 19980325 EP/AK-A1 [+]

DESIGNATED CONTRACTING STATES IN AN APPLICATION WITH SEARCH REPORT:

IN EINER ANMELDUNG BENANNTE VERTRAGSSTAATEN

DE FR GB

- 19980325 EP/A1 [+]

PUBLICATION OF APPLICATION WITH SEARCH REPORT

VEROEFFENTLICHUNG DER ANMELDUNG MIT RECHERCHENBERICHT

- 19980325 EP/17P [+]

REQUEST FOR EXAMINATION FILED

PRUEFUNGSANTRAG GESTELLT

971110

- 19981209 EP/17Q [+]

FIRST EXAMINATION REPORT

ERSTER PRUEFUNGSBESCHEID

981026

- 19991201 EP/RAP1
- APPLICANT REASSIGNMENT (CORRECTION)
- ANMELDER UEBERTRAGUNG (KORR.)
- DSM N.V.

UP - 1999-48

2/3 LGST - (C) LEGSTAT

PN - US 5707780 [US5707780]

AP - US 612509/96 19960307 [1996US-0612509]

DT - US-P

ACT - 19960307 US/AE-A

APPLICATION DATA (PATENT)

{US 612509/96 19960307 [1996US-0612509]}

- 19980113 US/A

PATENT

- 19990604 US/AS02

ASSIGNMENT OF ASSIGNOR'S INTEREST

DSM, N.V. 6411 TE HEERLEN, NETHERLANDS \* E.I. DU PONT DE NEMOURS AND  
COMPANY : 19990429

- 20000418 US/RF

REISSUE APPLICATION FILED

20000111

UP - 2000-17

3/3 LGST - (C) LEGSTAT

PN - WO 9641239 [WO9641239]

AP - WO 9608488/96(US) 19960604 [1996WO-US08488]

DT - WO-P

ACT - 19960604 WO/AE-A

APPLICATION DATA

{WO 9608488/96(US) 19960604 [1996WO-US08488]}

- 19961219 WO/AK-A1 [+]

DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT  
JP

- 19961219 WO/AL-A1 [+]

DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED  
APPLICATION WITH SEARCH REPORT

AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

- 19961219 WO/A1 [+]

PUBLICATION OF THE INTERNATIONAL APPLICATION WITH THE INTERNATIONAL  
SEARCH REPORT

- 19970416 WO/121

EP: PCT APP. ART. 158 (1)

- 19970821 WO/DFPE

REQUEST FOR PRELIMINARY EXAMINATION FILED PRIOR TO EXPIRATION OF 19TH  
MONTH FROM PRIORITY DATE

- 19971203 WO/ENP-A

ENTRY INTO THE NATIONAL PHASE IN:

<JP 97501074>

UP - 1998-51

1/1 CRXX - (C) CLAIMS/RRX

PN - 5,707,780 A 19980113 [US5707780]

PA - Du Pont de Nemours, E I & Co

ACT - 19990604 REASSIGNED

ASSIGNMENT OF ASSIGNOR'S INTEREST

Assignor: E.I. DU PONT DE NEMOURS AND COMPANY DATE SIGNED: 04/29/1999

Assignee: DSM, N.V. 6411 TE HEERLEN, NETHERLANDS

Reel 009996/Frame 0898

Contact: PILLSBURY MADISON & SUTRO LLP RUTH N. MORDUCH, IP GROUP 1100

NEW YORK AVENUE, N.W. NINTH FLOOR, EAST TOWER WASHINGTON, D.C.  
20005-3918

- 20000111 REISSUE REQUESTED  
Issue Date of O.G.: 20000318  
Reissue Request Number: 09/481654  
Examination Group responsible for Reissue process: 1752

1/1 PAST - (C) PAST  
AN - 200016-001025  
PN - 5707780 A [US5707780]  
OG - 2000-04-18  
ACT - REISSUE APPLICATION FILED

Search statement 2

?FI INPD

WPAT - Time in minutes : 0,84  
The cost estimation below is based on Questel's  
standard price list

Estimated cost :	1.97 USD
Records displayed and billed :	1
Estimated cost :	1.29 USD
Cost estimated for the last database search :	3.26 USD
Estimated total session cost :	4.02 USD

LGST - Time in minutes : 0,13  
The cost estimation below is based on Questel's  
standard price list

Estimated cost :	0.13 USD
Records displayed and billed :	3
Estimated cost :	4.68 USD
Cost estimated for the last database search :	4.81 USD
Estimated total session cost :	8.83 USD

CRXX - Time in minutes : 0,07  
The cost estimation below is based on Questel's  
standard price list

Estimated cost :	0.12 USD
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Estimated cost :	3.28 USD
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Estimated total session cost :	12.23 USD

PAST - Time in minutes : 0,07  
The cost estimation below is based on Questel's  
standard price list

Estimated cost :	0.11 USD
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Estimated cost :	4.77 USD
Cost estimated for the last database search :	4.88 USD
Estimated total session cost :	17.11 USD

LITA - Time in minutes : 0,02  
The cost estimation below is based on Questel's  
standard price list

Estimated cost :	0.03 USD
Cost estimated for the last database search :	0.03 USD
Estimated total session cost :	17.14 USD

Selected file: INPD

You are now connected to INPADOC  
Covers 1968/1973 thru weekly updates (2000-36)  
For information on content, ..INFO INPD.

Search statement 1

?FAM US5707780/PN

\*\* SS 1: Results 4

Search statement 2

?FAMSTAT MAX

1/4 INPD - (C) INPADOC

PN - EP 830641 A1 19980325 [EP-830641]  
TI - PHOTOHARDENABLE EPOXY COMPOSITION  
LA - ENG  
IN - LAWTON JOHN ALAN [US]; NEBE WILLIAM JOHN [US]; THOMMES GLEN ANTHONY  
[US]; CASPAR JONATHAN V [US]  
PA - DU PONT [US]  
AP - EP 96919045/96-A 19960604 [1996EP-0919045]  
PR - WO 9608488/96(US)-W 19960604 [1996WO-US08488]  
- US 476482/95-A 19950607 [1995US-0476482]  
IC - G03F-007/029; G03C-009/08; B29C-067/00  
DS - DE\* FR\* GB\*

1/1 LEGALI - (C) LEGSTAT

PN - EP 830641 [EP-830641]  
AP - EP 96919045/96 19960604 [1996EP-0919045]  
DT - EP-P  
ACT - 19960604 EP/AE-A  
EP-APPLICATION  
EUROPAEISCHE ANMELDUNG  
{EP 96919045/96 19960604 [1996EP-0919045]}  
- 19980325 EP/AK-A1 [+]  
DESIGNATED CONTRACTING STATES IN AN APPLICATION WITH SEARCH REPORT:  
IN EINER ANMELDUNG BENANNT VERTRAGSSTAATEN  
DE FR GB  
- 19980325 EP/A1 [+]  
PUBLICATION OF APPLICATION WITH SEARCH REPORT  
VEROEFFENTLICHUNG DER ANMELDUNG MIT RECHERCHENBERICHT  
- 19980325 EP/17P [+]  
REQUEST FOR EXAMINATION FILED  
PRUEFUNGSANTRAG GESTELLT  
971110  
- 19981209 EP/17Q [+]  
FIRST EXAMINATION REPORT  
ERSTER PRUEFUNGSBESCHIED  
981026  
- 19991201 EP/RAP1  
APPLICANT REASSIGNMENT (CORRECTION)  
ANMELDER UEBERTRAGUNG (KORR.)  
DSM N.V.  
UP - 1999-48

2/4 INPD - (C) INPADOC

PN - JP 11507090 T2 19990622 [JP11507090]  
AP - JP 501074/96-A 19960604 [1996JP-0501074]  
PR - WO 9608488/96(US)-W 19960604 [1996WO-US08488]  
- US 476482/95-A 19950607 [1995US-0476482]

IC - C08G-059/20; C08F-002/50; C08G-059/40; G03F-007/027; G03F-007/038;  
C08F-020/00; C09D-004/02

3/4 INPD - (C) INPADOC

PN - US 5707780 A 19980113 [US5707780]  
TI - PHOTOHARDENABLE EPOXY COMPOSITION  
IN - LAWTON JOHN ALAN [US]; NEBE WILLIAM JOHN [US]; THOMMES GLEN ANTHONY  
[US]; CASPAR JONATHAN V [US]  
PA - DU PONT [US]  
AP - US 612509/96-A 19960307 [1996US-0612509]  
PR - US 612509/96-A 19960307 [1996US-0612509]  
- US 476482/95-B3 19950607 [1995US-0476482]  
IC - G03F-007/028; G03F-007/26

1/1 LEGALI - (C) LEGSTAT

PN - US 5707780 [US5707780]  
AP - US 612509/96 19960307 [1996US-0612509]  
DT - US-P  
ACT - 19960307 US/AE-A  
APPLICATION DATA (PATENT)  
{US 612509/96 19960307 [1996US-0612509]}  
- 19980113 US/A  
PATENT  
- 19990604 US/AS02  
ASSIGNMENT OF ASSIGNOR'S INTEREST  
DSM, N.V. 6411 TE HEERLEN, NETHERLANDS \* E.I. DU PONT DE NEMOURS AND  
COMPANY : 19990429  
- 20000418 US/RF  
REISSUE APPLICATION FILED  
20000111  
UP - 2000-17

4/4 INPD - (C) INPADOC

PN - WO 9641239 A1 19961219 [WO9641239]  
TI - PHOTOHARDENABLE EPOXY COMPOSITION  
LA - ENG  
IN - LAWTON JOHN ALAN; NEBE WILLIAM JOHN; THOMMES GLEN ANTHONY; CASPAR  
JONATHAN V  
PA - DU PONT [US]  
AP - WO 9608488/96(US)-A 19960604 [1996WO-US08488]  
PR - US 476482/95-A 19950607 [1995US-0476482]  
IC - G03F-007/029; G03C-009/08; B29C-067/00  
DS - JP\* AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

1/1 LEGALI - (C) LEGSTAT

PN - WO 9641239 [WO9641239]  
AP - WO 9608488/96(US) 19960604 [1996WO-US08488]  
DT - WO-P  
ACT - 19960604 WO/AE-A  
APPLICATION DATA  
{WO 9608488/96(US) 19960604 [1996WO-US08488]}  
- 19961219 WO/AK-A1 [+]  
DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT  
JP  
- 19961219 WO/AL-A1 [+]  
DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED  
APPLICATION WITH SEARCH REPORT  
AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
- 19961219 WO/A1 [+]  
PUBLICATION OF THE INTERNATIONAL APPLICATION WITH THE INTERNATIONAL  
SEARCH REPORT  
- 19970416 WO/121  
EP: PCT APP. ART. 158 (1)

- 19970821 WO/DFPE  
 REQUEST FOR PRELIMINARY EXAMINATION FILED PRIOR TO EXPIRATION OF 19TH  
 MONTH FROM PRIORITY DATE  
 - 19971203 WO/ENP-A  
 ENTRY INTO THE NATIONAL PHASE IN:  
 <JP 97501074>  
 UP - 1998-51

Search statement 2

>>>

Please TRANSMIT the NAME of the file you want to search. To see a description  
 of a file, type its page number and press the TRANSMIT key.

FILES - PAGE 1 of 7 (NEXT PAGE for additional files)

NAME	PG	DESCRIP	NAME	PG	DESCRIP
<---CASES & ADMINISTRATIVE DECISIONS-->			<-----PATENTS GROUP FILES----->		
IPOMNI	1	Int Prop Cases & Reg Matl	ALL	4	UTIL, DESIGN, PLANT, SIR,
PTOMNI	1	FEDCTS, PTO, ITC, ALLREG			REEEXAM & REISS
CASES	1	FEDCTS, PTO & ITC	ALLPAT	4	Comb. ALL & INTPAT
FEDCTS	2	Patent cases from Fed. Cts.	<-----U.S. PATENTS----->		
CCPA	2	Ct Customs & Patent Appeals	UTIL	4	Full Text Patents from 1971*
CAFC	2	Patent cases from Fed. Cir.	DESIGN	4	Full Text Patents from 1976
PTO	2	PATAPP & COMMR	PLANT	4	Full Text Patents from 1976
<-----SECONDARY SOURCES----->					
IPLTR	5	Intell Prop Law Nwltrs			
IPLR	5	Intell Prop Law Rev Articles			

\* Selected coverage 1/15/71 to 12/3/74

>>>

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 What you transmit will be Search Level 1.

Type .fr to enter a FREESTYLE(TM) search.

For further explanation, press the H key (for HELP) and then the TRANSMIT key.

>>>



PATNO IS 5707780

If it is not what you intended to enter, please press the STOP key.  
<LEXIS is working on the displayed request.>

PATNO IS 5707780

Your search request has found 1 PATENT through Level 1.  
To DISPLAY this PATENT press either the KWIC, FULL, CITE or SEGMENTS key.  
To MODIFY your search request, press the M key (for MODIFY) and then the TRANSMIT key.

For further explanation, press the H key (for HELP) and then the TRANSMIT key.  
>>>

LEVEL 1 - 1 OF 1 PATENT

<5,707,780>

Jan. 13, 1998

Photohardenable epoxy composition

REISSUE: Reissue Application filed Jan. 11, 2000 (O.G. Apr. 18, 2000) Ex. Gp.:  
1752; Re. S.N. 09/481,654

INVENTOR: Lawton, John Alan, Landenberg, Pennsylvania

Nebe, William John, Wilmington, Delaware  
Thommes, Glen Anthony, Wilmington, Delaware  
Caspar, Jonathan V., Greenville, Delaware

ASSIGNEE-AT-ISSUE: E. I. Du Pont de Nemours and Company, Wilmington, Delaware  
(02)

ASSIGNEE-AFTER-ISSUE: Date Transaction Recorded: Jun. 04, 1999  
ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).  
DSM, N.V. 6411 TE HEERLEN, NETHERLANDS  
Reel & Frame Number: 009996/0898  
>>>

Pat. No. 5707780, \*

APPL-N0: 612,509

FILED: Mar. 7, 1996

REL-US-DATA:

Division of Ser. No. 476,482, Jun. 7, 1995 now abandoned

INT-CL: [6] G03F 7#028; G03F 7#26

US-CL: 430#280.1; 430#269; 430#945; 522#2; 522#170; 264#401

CL: 430;522;264

SEARCH-FLD: 430#945, 280.1, 269; 522#2, 170; 264#401

REF-CITED:

U.S. PATENT DOCUMENTS

Re. 29,131	2/1977	*	Smith et al.	260#77.5AN
3,450,613	6/1969	*	Steinberg	204#159.15
4,026,705	5/1977	*	Crivello et al.	96#27R

>>>

Pat. No. 5707780, \*

4,069,054	1/1978	*	Smith	96#115P
4,113,895	9/1978	*	Watt et al.	427#44
4,138,255	2/1979	*	Crivello	96#35.1
4,156,035	5/1978	*	Tsao et al.	427#44
4,173,476	11/1979	*	Smith et al.	430#280
4,245,029	1/1981	*	Crivello	430#280
4,250,053	2/1981	*	Smith	252#426
4,291,114	9/1981	*	Berggren et al.	430#253
4,442,197	4/1984	*	Crivello et al.	430#280
4,504,374	3/1985	*	Lewarchik et al.	204#181C
4,624,912	11/1986	*	Zweifel et al.	430#258
4,668,601	5/1987	*	Kistner	430#162
4,694,029	9/1987	*	Land	522#8
5,055,439	10/1991	*	Allen et al.	502#158
5,059,512	10/1991	*	Babich et al.	430#280.1
5,182,056	1/1993	*	Spence	264#22
5,384,339	1/1995	*	Starkey	522#3
5,476,748	12/1995	*	Steinmann et al.	430#269
5,573,889	11/1996	*	Hofman et al.	430#285.1

>>>

Pat. No. 5707780, \*

FOREIGN PATENT DOCUMENTS

2111718	12/1993	*	Canada	G03#F7028
0 360 869 A1	2/1989	*	European Patent Office (EPO)	C08#G5.968

OTHER PUBLICATIONS

Kubisen et al, Chemical Abstracts, vol. 104, Entry: 150835, p. 99, year 1986, Abstract of Radcure '84, Conf. Proc; 8th (1984), May 22-May 31.

PRIM-EXMR: Hamilton, Cynthia

CORE TERMS: composition, epoxy, acid, layer, exposure, green strength, ratio, free radical, region, concentration, resin, viscosity, polymerization, acrylate, photohardenable, wavelength, initiator, exposed, monomer, imaged, precursor, coefficient, extinction, mixture, photo-generated, mix, humidity, acrylic, minute, photo-generating

ABST:

A photohardenable composition especially suitable for use in solid imaging.  
>>>

Pat. No. 5707780, \*

The compositions are characterized by their improved photospeed in combined with excellent initial green strength. The compositions allows for the production of articles by solid imaging processing techniques that show little or no distortion, high accuracy, excellent clarity. The compositions are low in toxicity and have low sensitivity to water.

NO-OF-CLAIMS: 2

EXMPL-CLAIM: <=> 1,2

NO-OF-FIGURES: 0

NO-DRWNG-PP: 0

PARCASE: This is a division of application Ser. No. 08/476,482, filed Jun. 7, 1995, now abandoned.

SUM:

This invention relates to photohardenable compositions especially suitable for use in solid imaging. The compositions are formulated to control the diffusion such that the photo-generated initiators of the polymerization are